

Application No. 10/006,400
Amendment "F" dated May 8, 2006
Reply to Office Action mailed March 6, 2006

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1-10. (Cancelled)

11. (Currently Amended) An apparatus for positioning a closure device within a passage, comprising:

an elongate member comprising a proximal end, a distal end, and a lumen extending between the proximal and distal ends defining a longitudinal axis;

a clip deliverable from the elongate member for sealing the passage; and

a selectively expandable locator member extending through the lumen, the locator member comprising a distal portion extending distally beyond the distal end of the elongate member, the distal portion comprising an elongate deflectable element comprising a helically wound wire extending between a proximal end and a distal end, and a control element coupled to the deflectable element, the control element being movable axially for causing an intermediate portion of the deflectable element to buckle substantially transversely with respect to the longitudinal axis.

12. (Currently Amended) The apparatus of claim 11, wherein ~~the deflectable element comprises a helically wound wire extending between the proximal and distal ends of the deflectable element, and wherein the control member~~ element comprises a tether extending along an outer surface of at least the intermediate portion of the helically wound wire.

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13. (Previously Presented) The apparatus of claim 12, wherein the intermediate portion of the deflectable element has a cross-section in its buckled configuration that is larger than a cross-section of the distal port.

14. (Previously Presented) The apparatus of claim 11, further comprising an actuator on a proximal end of the elongate member, the actuator coupled to the locator member, the actuator configured for moving the control element proximally for buckling the intermediate portion of the deflectable element.

15. (Previously Presented) The apparatus of claim 11, wherein the elongate member and the selectively expandable locator member comprise cooperating detents for substantially securing the selectively expandable locator member axially with respect to the elongate member when the selectively expandable locator member is fully inserted into the elongate member.

16. (Previously Presented) The apparatus of claim 11, further comprising a housing slidably disposed on an exterior of the elongate member, the housing configured for releasably holding the clip, the housing being actuable for advancing the clip distally towards the distal end of the elongate member for deploying the clip.

17-20. (Cancelled)

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21. (Original) An apparatus for delivering a closure element into a passage communicating with an opening into a body lumen, comprising:

an elongate member comprising proximal and distal ends;

a housing slidably coupled to the elongate member, the housing configured for releasably holding a closure device;

a locator member coupled to the elongate member, the locator member having a distal portion extending distally beyond the distal end of the elongate member, the distal portion comprising helically wound wire comprising a proximal end, a distal end, and an intermediate portion therebetween, and a control element coupled to the distal end of the helically wound wire, the control element being movable axially for causing the intermediate portion of the helically wound wire to buckle substantially transversely with respect to the longitudinal axis.

22. (Original) The apparatus of claim 21, wherein the control element comprises a tether extending along an outer surface of at least the intermediate portion of the helically wound wire.

23. (Original) The apparatus of claim 21, wherein the elongate member and the locator member include cooperating detents for substantially securing the locator member axially with respect to the elongate member.

24. (Original) The apparatus of claim 21, further comprising an actuator coupled to the housing, the actuator configured for advancing the housing distally to deploy a closure element therefrom.

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25. (Original) The apparatus of claim 21, further comprising a closure element located within the housing.

26. (Original) The apparatus of claim 25, wherein the closure element comprises a clip.

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27. (Currently Amended) A method for sealing a passage communicating with a body lumen using an elongate member comprising proximal and distal ends, and a closure element deployable from the distal end of the elongate member, the method comprising:

providing a selectively expandable locator member coupled to the elongate member such that a distal portion of the locator member extends distally beyond the distal end of the elongate member;

advancing the distal end of the elongate member through a patient's skin towards the body lumen via the passage until the distal portion of the locator member is located within the body lumen;

buckling a deflectable element on the distal portion of the selectively expandable locator member from an axial collapsed configuration to a transverse expanded configuration, the deflectable element comprising a helically wound wire extending between a proximal end and a distal end;

manipulating the elongate member until the deflectable element in the expanded configuration contacts a proximal wall of the body lumen, thereby providing a tactile indication of a location of the distal end of the elongate member relative to the body lumen; and

deploying the closure element from the distal end of the elongate member within the passage.

28. (Previously Presented) The method of claim 27, further comprising withdrawing the elongate member and the selectively expandable locator member from the passage, leaving the closure element to substantially close the opening.

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29. (Original) The method of claim 27, wherein the elongate member comprises an introducer sheath, and wherein the method further comprises introducing one or more instruments through the lumen of the sheath into the body lumen prior to performing the steps of claim 23.

30. (Original) The method of claim 29, further comprising performing a diagnostic or therapeutic procedure using the one or more instruments at a location accessed via the body lumen prior to performing the steps of claim 29.

31. (Original) The method of claim 27, wherein the body lumen comprises a blood vessel, and wherein the procedure comprises at least one of angioplasty, atherectomy, stent delivering, delivery of a therapeutic agent, and tissue ablation.

32. (Currently Amended) The method of claim 27, wherein ~~the deflectable element comprises a helically wound wire, and wherein the buckling step comprises directing a control member coupled to a distal end of the helically wound wire proximally.~~

33-37. (Cancelled)

38. (Original) The method of claim 27, wherein the deploying step comprises advancing a housing distally along an exterior of the elongate member, the housing having the closure device detachably held thereto.

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39. (Original) The method of claim 38, wherein the housing is movable between a proximal position and a distal position, the distal position being a predetermined distance from the deflectable element in its expanded configuration.

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40. (Currently Amended) A method for sealing a passage communicating with a body lumen using a tubular member comprising proximal and distal ends and a lumen extending therebetween, and a closure element deployable from the distal end of the tubular member, the method comprising:

advancing the distal end of the tubular member through a patient's skin into the passage towards the body lumen;

introducing a selectively expandable locator member into the lumen of the tubular member until a distal portion of the locator member extends beyond the distal end of the tubular member;

buckling a deflectable element of the distal portion of the selectively expandable locator member from a collapsed configuration to a transversely expanded configuration within the body lumen, the deflectable element comprising a helically wound wire extending between a proximal end and a distal end;

manipulating the tubular member until the deflectable element in the expanded condition contacts a proximal wall of the body lumen, thereby providing a tactile indication of a location of the distal end of the tubular member relative to the body lumen; and

deploying the closure device from the distal end of the tubular member within the passage.

41. (Previously Presented) The method of claim 40, wherein the selectively expandable locator member is introduced into the lumen of the tubular member before the distal end of the tubular member is advanced into the passage such that the distal portion of the

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selectively expandable locator member is advanced through the passage into the body lumen as the distal end of the tubular member is located into the passage.

42. (Previously Presented) The method of claim 40, wherein the selectively expandable locator member is introduced into the lumen of the tubular member after the distal end of the tubular member is advanced into the passage.

43-45. (Cancelled)

46. (Previously Presented) The method of claim 27, wherein the deploying step comprises advancing a housing distally along an exterior of the elongate member, the housing having the closure element detachably held thereto.

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47. (Currently Amended) A method for sealing a passage communicating with a body lumen, the method comprising:

introducing a selectively expandable locator member into the passage until a distal portion of the selectively expandable locator member extends into the body lumen;

buckling a deflectable element on the distal portion of the selectively expandable locator member from a collapsed configuration to a transversely expanded configuration within the body lumen, the deflectable element comprising a helically wound wire extending between a proximal end and a distal end;

manipulating the selectively expandable locator member until the deflectable element in the expanded condition contracts a proximal wall of the body lumen; and

advancing a clip having tines which extend substantially axially and distally along the selectively expandable locator member until the clip is disposed at a predetermined location relative to the distal portion of the locator member;

returning the distal portion of the selectively expandable locator member from the expanded condition to the collapsed configuration; and

withdrawing the locator member from the passage, leaving the clip in the passage.

48. (Previously Presented) The method of claim 47, wherein the step of introducing the selectively expandable locator member comprises:

disposing a tubular member through a patient's skin into the passage until a distal end of the tubular member is disposed proximate the body lumen;

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introducing the selectively expandable locator member into a lumen of the tubular member until the distal portion of the locator member extends beyond the distal end of the tubular member into the body lumen.

49. (Original) The method of claim 48, further comprising withdrawing the tubular member from the passage before advancing a clip into the passage.

50. (Original) The method of claim 48, further comprising introducing one or more instruments through the lumen of the tubular member into the body lumen prior to performing the steps of claim 47.

51. (Previously Presented) The method of claim 47, wherein the step of advancing a clip comprises advancing an elongate member having the clip thereon into the passage over the selectively expandable locator member, and wherein the method further comprises deploying the clip from the elongate member at the predetermined location.

52-53. (Cancelled)

54. (Previously Presented) The method of claim 51, wherein the selectively expandable locator member and the elongate member comprise cooperating elements for identifying when the closure device reaches the predetermined location.

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55. (Previously Presented) The method of claim 54, wherein the cooperating elements comprise a marker on the selectively expandable locator member having a predetermined relationship with the distal portion of the selectively expandable locator member.

56. (Previously Presented) The method of claim 51, wherein the step of advancing a clip comprises advancing a housing along the elongate member until the clip reaches the predetermined location.

57-59. (Cancelled)

60. (Previously Presented) The method of claim 27, wherein the closure element comprises a generally annular clip having tines which extend substantially axially and distally carried on an exterior of the elongate member, and wherein the deploying step comprises advancing the clip towards the distal end of the elongate member until tines of the clip penetrate tissue adjacent the body lumen.

61. (Previously Presented) The method of claim 60, wherein the deflatable element is collapsed during the deployment step.

62. (Previously Presented) The method of claim 61, wherein the elongate member comprises a tubular member, and wherein the distal portion of the selectively expandable locator member is retracted into the lumen after the deflatable element is collapsed.

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63. (Previously Presented) An apparatus for positioning a closure device within a passage through tissue communicating with a body lumen, comprising:

an elongate member comprising a proximal end, a distal end, and a lumen extending between the proximal and distal ends defining a longitudinal axis;

a clip deliverable from the elongate member for sealing the passage; and

a locator member extending through the lumen, the locator member comprising a distal portion extending distally beyond the distal end of the elongate member, the distal portion comprising an elongate deflectable element comprising a proximal end and a distal end, and a control element coupled to the deflectable element, the control element being moveable axially for causing an intermediate portion of the deflectable element to buckle substantially transversely with respect to the longitudinal axis wherein the deflectable element comprises a helically wound wire extending between the proximal and distal ends of the deflectable element, and wherein the control member comprises a tether extending along an outer surface of at least the intermediate portion of the helically wound wire.

64. (Previously Presented) The apparatus of claim 63, wherein the intermediate portion of the deflectable element has a cross-section in its buckled configuration that is larger than a cross-section of the distal port.

65. (Previously Presented) The apparatus of claim 63, further comprising an actuator on a proximal end of the elongate member, the actuator coupled to the locator member, the actuator configured for moving the control element proximally for buckling the intermediate portion of the deflectable element.

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66. (Previously Presented) The apparatus of claim 63, wherein the elongate member and the locator member comprise cooperating detents for substantially securing the locator member axially with respect to the elongate member when the locator member is fully inserted into the elongate member.

67. (Previously Presented) The apparatus of claim 63, further comprising a housing slidably disposed on an exterior of the elongate member, the housing configured for releasably holding the clip, the housing being actuable for advancing the clip distally towards the distal end of the elongate member for deploying the clip.

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68. (Previously Presented) A method for sealing a passage communicating with a body lumen using an elongate member comprising proximal and distal ends, and a closure element deployable from the distal end of the elongate member, the method comprising:

coupling a locator member to the elongate member such that a distal portion of the locator member extend distally beyond the distal end of the elongate member;

advancing the distal end of the elongate member through a patient's skin towards the body lumen via the passage until the distal portion of the locator member is located within the body lumen;

buckling a deflectable element comprising a helically wound wire on the distal portion of the locator member from an axial collapsed configuration to a transverse expanded configuration;

manipulating the elongate member until the deflectable element in the expanded configuration contacts a proximal wall of the body lumen, thereby providing a tactile indication of a location of the distal end of the elongate member relative to the body lumen; and

deploying the closure device from the distal end of the elongate member within the passage.

69. (Previously Presented) The method of claim 68, further comprising withdrawing the elongate member and the locator member from the passage, leaving the closure element to substantially close the opening.

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70. (Previously Presented) The method of claim 68, wherein the elongate member comprises an introducer sheath, and wherein the method further comprises introducing one or more instruments through the lumen of the sheath into the body lumen.

71. (Previously Presented) The method of claim 70, further comprising performing a diagnostic or therapeutic procedure using the one or more instruments at a location accessed via the body lumen.

72. (Previously Presented) The method of claim 68, wherein the body lumen comprises a blood vessel, and wherein the procedure comprises at least one of angioplasty, atherectomy, stent delivery, delivery of a therapeutic agent, and tissue ablation.

73. (Previously Presented) The method of claim 68, wherein the deflectable element comprises a helically wound wire, and wherein the buckling step comprises directing a control member coupled to a distal end of the helically wound wire proximally.

74. (Previously Presented) The method of claim 68, wherein the deploying step comprises advancing a housing distally along an exterior of the elongate member, the housing having the closure device detachably held thereto.

75. (Previously Presented) The method of claim 74, wherein the housing is movable between a proximal position and a distal position, the distal position being a predetermined distance from the deflectable element in its expanded configuration.

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76. (Previously Presented) The method of claim 68, wherein the deploying step comprises advancing a housing distally along an exterior of the elongate member, the housing having the closure device detachably held thereto.

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77. (Previously Presented) A method of sealing a passage communicating with a body lumen, the method comprising:

introducing a locator member into the passage until a distal portion of the locator member extends into the body lumen;

buckling a deflectable element on the distal portion of the locator member from a collapsed configuration to a transversely expanded configuration within the body lumen;

manipulating the locator member until the deflectable element in the expanded condition contacts a proximal wall of the body lumen; and

advancing a clip along the locator member until the clip is disposed at a predetermined location relative to the distal portion of the locator member;

returning the distal portion of the locator member from the expanded condition to the collapsed configuration; and

withdrawing the locator member from the passage, leaving the closure device in the passage, wherein the step of advancing a clip comprises advancing an elongate member having the clip thereon into the passage over the locator member, and wherein the method further comprises deploying the clip from the elongate member at the predetermined location, and wherein the locator member and the elongate member comprise cooperating elements for identifying when the clip reaches the predetermined location.

78. (Previously Presented) The method of claim 77, wherein the cooperating elements comprise a marker on the locator member having a predetermined relationship with the distal portion of the locator member.

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79. (Cancelled)

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